

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims**

**Claim 1 (Currently amended):** An arc welding control method for welding a member to be welded, comprising the steps of:

repeating alternately a short circuit period allowing a welding wire to short circuit with respect to the member to be welded and an arc period allowing arc recurrence and arc discharge;

controlling a welding output current to have a peak current in the short circuit period;

controlling ~~a~~the welding output current to be steeply lowered just before the arc recurrence; and

controlling the welding output current ~~just after~~ for a set given period starting from the arc recurrence to be always higher than ~~a~~the peak current of ~~a~~the welding output current in the short circuit period ~~for a set given period,~~

wherein a value of the welding output current for the set given period is determined based on a value of the peak current in the short circuit period.

**Claim 2 (Cancelled):**

**Claim 3 (Currently amended):** An arc welding control method as set forth in Claim 1, wherein the welding output current ~~just after~~  
~~are recurrence~~ for a set given period is controlled to have a value equal to the sum of the peak current of the welding output current in the short circuit period and a given value.

**Claim 4 (Currently amended):** An arc welding control method as set forth in Claim 1, wherein the welding output current ~~just after~~  
~~are recurrence~~ for a set given period is controlled to have a value obtained by multiplying the peak current of the welding output current in the short circuit period by a given magnification.

**Claim 5 (Currently amended):** An arc welding control method as set forth in Claim 1, wherein the welding output current ~~just after~~  
~~are recurrence~~ for a set given period is controlled to increase and decrease according to a difference between a welding output voltage just before arc recurrence and a set voltage previously set.

**Claim 6 (Currently amended):** An arc welding machine for welding a member to be welded by repeating alternately a short circuit period allowing a welding wire to short circuit with respect to the member to be welded and an arc period allowing arc recurrence and arc discharge, comprising:

a welding current detect part for detecting a welding output current; a welding voltage detect part for detecting a welding output voltage;

a short circuit arc judge part for judging whether a welding state is in the short circuit period or in the arc period; a setting part for setting at least one of the set values of a current and a voltage in the short circuit period and in the arc period and outputting the set value;

an arc initial control part for inputting therein the respective outputs of the welding current detect part, the welding voltage detect part and the setting part, setting a welding output current at an arc recurrence initial time, and outputting the thus set welding output current;

a drive part for inputting therein the output of the short circuit arc judge part, and controlling such inputs selectively according to the arc state; and

a timer part for inputting thereinto the output of the short circuit arc judge part, timing a given time starting from arc occurrence, setting an arc initial control time, and outputting the arc initial control time to the drive part,

wherein the arc initial control part controls a welding current to be steeply lowered just before the arc recurrence; and

wherein the arc initial control part controls a welding current at an arc recurrence time in the arc initial control time set by the timer part and starting from the arc recurrence to be always higher than a peak current of the welding current in the short circuit period, a value of the welding current at the arc recurrence time being determined based on a value of the peak current in the short circuit period.

**Claim 7 (Original):** An arc welding machine as set forth in Claim 6, wherein the setting part sets the set current value of the arc initial control part and the set time of the timer part, using at least one of a set current value, a set voltage value set, the quantity of feed of a wire, the kind of a sealed gas, the material of the wire, the diameter of the wire and a welding method respectively set in the setting part.

**Claim 8 (Cancelled):**

**Claim 9 (Previously presented):** An arc welding machine as set forth in Claim 6, wherein the arc initial control part controls the welding output current just after arc recurrence to have a value obtained by adding a given value to the peak current of the welding output current in the short circuit period.

**Claim 10 (Previously presented):** An arc welding machine as set forth in Claim 6, wherein the arc initial control part controls the welding output current just after arc recurrence to have a value obtained by multiplying the peak current of the welding output current in the short circuit period by a given magnification.

**Claim 11 (Previously presented):** An arc welding machine as set forth in Claim 6, wherein the arc initial control part controls the welding output current just after arc recurrence to increase or decrease according to a difference between the welding output voltage just before arc recurrence and the set voltage set by the setting part.

**Claim 12 (Cancelled):**

**Claim 13 (Cancelled):**

**Claim 14 (Currently amended):** An arc welding control method for welding a member to be welded, comprising the steps of:

repeating alternately a short circuit period allowing a welding wire to short circuit with respect to the member to be welded and an arc period allowing arc recurrence and arc discharge; and

controlling a welding output current to have a peak current in the short circuit period;

controlling a welding output current just after arc recurrence to be ~~constantly~~ always higher than a welding output current just before arc recurrence for a set given period starting from arc recurrence,

wherein a value of the welding output current just after arc recurrence is determined based on a value of the peak current in the short circuit period.

**Claim 15 (Currently amended):** An arc welding machine for welding a member to be welded by repeating alternately a short circuit

period allowing a welding wire to short circuit with respect to the member to be welded and an arc period allowing arc recurrence and arc discharge, comprising:

a welding current detect part for detecting a welding output current; a welding voltage detect part for detecting a welding output voltage;

a short circuit arc judge part for judging whether a welding state is in the short circuit period or in the arc period; a setting part for setting at least one of the set values of a current and a voltage in the short circuit period and in the arc period and outputting the set value;

an arc initial control part for inputting therein the respective outputs of the welding current detect part, the welding voltage detect part and the setting part, setting a welding output current at an arc recurrence initial time, and outputting the thus set welding output current;

a drive part for inputting therein the output of the short circuit arc judge part, and controlling such inputs selectively according to the arc state; and

a timer part for inputting therein the output of the short circuit arc judge part, timing a given time starting from arc occurrence, setting an arc initial control time, and outputting the arc initial control time to the drive part,

wherein the arc initial control part controls a welding current at an arc recurrence time for the arc initial control time period set by the timer part to be ~~constantly~~ always higher than a welding current just before arc recurrence, wherein the arc initial control time period starts from arc recurrence; and

wherein a value of the welding current at the arc recurrence time is determined based on a value of the peak current in the short circuit period.